CLAIMS

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What is claimed is:

A method for merging partially filled ATM cells, comprising the steps of:

removing a first partially filled ATM cell from an AFM cell stream;

removing a second partially filled ATM cell from the ATM cell stream; and merging the first partially filled ATM cell and the second partially filled ATM cell into a third ATM cell.

A method for merging partially filled ATM cells as in claim 1, further comprising
 the step of:

inserting the third ATM cell into the ATM cell stream.

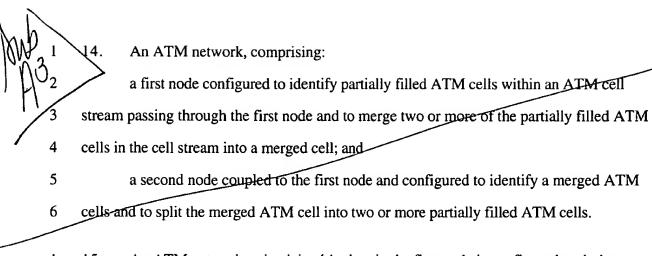
A method for merging partially filled ATM cells as in claim 2 wherein said third ATM cell comprises header information required to reconstruct the partially filled ATM cells contained within the third ATM cell at a receiving end.

- 4. A method for merging partially filled ATM cells as in claim 3 wherein said header information includes information indicative of the number of partially filled ATM cells contained within the third ATM cell.
- 1 5. A method for merging partially filled ATM cells as in claim 2 wherein the third
- 2 ATM cell is inserted into the ATM cell stream so as to maintain correct cell ordering within
- 3 the ATM cell stream.
- 1 6. A method for merging partially filled ATM cells as in claim 5 wherein said steps of
- 2 removing a first partially filled ATM cell from an ATM cell stream; removing a second
- 3 partially filled ATM cell from the ATM cell stream; and merging the first partially filled
- 4 ATM cell and the second partially filled ATM cell into a third ATM cell are carried out in an

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5 ATM switch.

- 1 7. A method for merging partially filled ATM cells as in claim 5 wherein said steps of
- 2 removing a first partially filled ATM cell from an ATM cell stream; removing a second
- 3 partially filled ATM cell from the ATM cell stream; and merging the first partially filled
- 4 ATM cell and the second partially filled ATM cell into a third ATM cell are carried out in an
- 5 ATM end-system.
- 1 8. A method for merging partially filled ATM cells as in claim 5 further comprising the
- 2 step of transmitting the third ATM cell.
- 1 9. A data communication device, comprising:
- 2 means for identifying partially filled ATM cells within an ATM cell/stream
- 3 associated with the device; and
- 4 means for removing partially filled ATM cells from the ATM cell stream coupled to
- 5 the means for identifying!
- 1 10. A data communication device as in claim 9, further comprising:
- 2 means for merging at least two partially filled ATM cells into a merged ATM cell
- 3 coupled to the means for removing.
- 1 11. A data communication device as in claim 10, further comprising:
- 2 means for inserting the merged ATM cell into the ATM cell stream coupled to the
- 3 means for merging.
- 1 12. A data communication device as in claim 11 wherein the means for identifying
- 2 comprises a lookup table stored in a computer readable format on a computer readable
- 3 medium and indexable using logical connection identification information from the ATM
- 4 cells within the ATM cell stream.
- 1 13. A data communication device as in claim 11, further comprising:
- 2 means for splitting a merged ATM cell into two or more partially filled ATM cells.



- 1 15. An ATM network as in claim 14 wherein the first node is configured such that
- 2 circuitry in the first node performs the steps of:
- removing a first partially filled ATM cell from the ATM cell stream;
- 4 removing a second partially filled ATM cell from the ATM cell stream; and
- 5 merging the first partially filled ATM cell and the second partially filled ATM cell
- 6 into a third ATM cell.
- 1 16. An ATM network as in claim 15 wherein the first node is further configured such
- 2 that circuitry in the first node performs the further step of:
- inserting the third ATM cell into the ATM cell stream.
- 1 17. An ATM network as in claim 16 wherein said third ATM cell comprises header
- 2 information indicative of the number of partially filled ATM cells contained within the third
- 3 ATM cell.
- 1 18. An ATM network as in claim 16 wherein the third ATM cell is inserted into the
- 2 ATM cell stream so as to maintain correct cell ordering within the ATM cell stream.
- 1 19. An ATM network as in claim 16 wherein the first node is an ATM end-system.
- 1 20. An ATM network aş in claim 16 wherein the first node is an ATM switch.

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